

Social Issues Critical for Sustainability of Reform Education Sector Discussion Paper

Prepared for

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Social Issues Critical for Sustainability of Reform: Education Sector Discussion Paper

Introduction

Education prepares the youth of today to become economically productive and democratically engaged citizens tomorrow. In the former Soviet Union and the communist bloc countries in Central and Eastern Europe, educational systems ensured nearly universal access to primary and secondary education, creating a citizenry with literacy rates often higher than those in western countries. Unfortunately, the process of transition unleashed financial strains that have sent school enrollment rates tumbling across the region, narrowing the gap between the transition countries and other developing nations. Moreover, the ideologically-based pedagogical approach which supported communism is unsuited to market democracy which demands problem-solving skills and an emphasis on individual and social rights, responsibilities, and values. If left unchecked, these negative trends and characteristics could threaten efforts to create sustainable democratic and economic reforms. In this discussion paper, we use comparative data to assess the performance of the education systems in Europe and Eurasia. Through examining each country's performance in a global context over time, we can identify strengths that can be built upon and weaknesses that should be addressed.

Methodology

Nearly ten USAID staff members helped to develop a comprehensive framework of analysis, which was refined over several months. The final conceptual framework is based on four pillars and includes 22 indicators that capture critical dimensions of the education sector, including enrollment, attainment (i.e., number of years of education completed), equity, and funding (see Table 1). Countries were first ranked from worst to best performers for each indicator as measured in 2002 and its rate of change since 1998. Then countries were clustered into three groups: highly vulnerable, vulnerable, and not vulnerable based on the value of each indicator. Sources of education data included the UNICEF Social Transition report and the World Bank EdStats database¹. The donor assistance data was from the OECD Creditor Reporting System, which records contributions from bilateral donors in the Development Assistance Committee and major multilateral organizations².

The analysis was structured around the analysis of 22 indicators grouped in four pillars. They are presented in Table 1.

¹ An Annex with sources and methods is available.

² For purposes of analysis, donor assistance excludes U.S. assistance.

Table 1. Pillars and Indicators Used to Describe the Education Sector

Pillar	Rationale	Indicators
<u>Context:</u> Demography, Resources and Efficiency	These indicators, while not specifically related to education, are important because they demonstrate the size of the problem, the resources that can be gathered internally, and the likelihood of proper management of reform efforts.	<ul style="list-style-type: none"> • Per-capita income • Demography • Control of corruption
<u>Level Strength:</u> Participation and Outcomes	These indicators measure the country's performance at each of the core levels – primary, secondary and tertiary. They demonstrate how many children are enrolled at each level, which helps us understand issues of access and equity. The trend variables give insight into recent changes and allow us to note dangerous warning signs.	<p>Primary Education</p> <ul style="list-style-type: none"> • Preprimary enrollment rate • Trend in preprimary enrollment • Primary school enrollment rate • Trend in primary enrollment • Primary completion rate • Pupil-teacher ratio <p>Secondary Education</p> <ul style="list-style-type: none"> • General secondary enrollment rate (academic) • Total secondary enrollment rate (academic + vocational) • Trend in secondary enrollment <p>Tertiary Education</p> <ul style="list-style-type: none"> • Tertiary enrollment rate • Trend in tertiary education
<u>Education System Strength:</u> Commitment, Funding and Outcomes	These indicators capture the overall strength of the educational system. They show whether the government is committing adequate resources, and how much education young people are actually receiving.	<ul style="list-style-type: none"> • % of GDP spent on education • Change in the % of GDP spent • Youth illiteracy rate • Average years of schooling
<u>Donor Support</u>	This data shows us how many external resources are being devoted to addressing the weaknesses noted in the other pillars.	<ul style="list-style-type: none"> • Total aid for education (Advanced technical, managerial, and vocational training; early childhood; facilities; policy and administration; research; primary, secondary and higher education; teacher training; and unspecified levels) • Funding for primary education • Funding for secondary education • Funding recorded for higher education.

For each indicator, the mean for the entire region, its standard deviation, and its quintile distribution are computed. Countries are considered vulnerable or highly vulnerable if the value of a particular indicator was below a set threshold. Thresholds are chosen so as to: (1) be consistent as much as possible across indicators, (2) be simple numbers, (3) separate countries in clusters of roughly the same size, and (4) make reference to the mean, to retain consistency with other papers written on social issues critical for the sustainability of reform.

The threshold to classify countries as vulnerable is 80 percent of the regional mean³. The threshold to classify countries as highly vulnerable is 50 percent of the regional mean. These thresholds work well for most indicators. Two exceptions are the percent of population under 15 years of age and control of corruption. Differently from other indicators, the demographic indicator denotes higher vulnerability as the numbers get higher (for the other indicators, higher vulnerability is associated with lower numbers). In other words, countries below the threshold of 50 percent (or 80%) of the mean are not more vulnerable but higher performing than the rest. Control of corruption is also different from the other indicators since its regional mean is a negative number. In this case, 50 percent of the mean (a negative number) is *larger* than the mean itself. For these reasons, using thresholds of 50 percent and 80 percent of the regional average means something different for these two indicators than it does for the others. For these indicators alone, no “high vulnerability” threshold is defined and countries are considered vulnerable if above the regional mean (population under 15 years of age) or below the regional mean (control of corruption).

Results

Pillar I. Context: Demography, Resources and Efficiency

Before presenting the performance of the different countries in terms of specific education indicators, it is helpful to provide a general context for the region in terms of demographics (percent of population under 15 years of age), level of economic activity (GDP per capita), and Government effectiveness in controlling corruption.

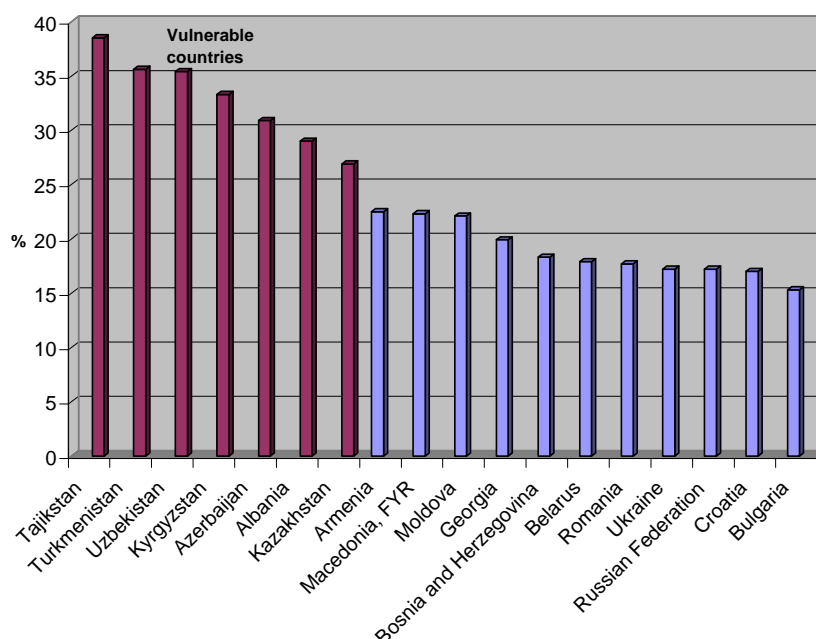
While not specifically related to education, these indicators are important because they illustrate the size of the problem (e.g., the size of the population that is of primary school age), the resources that can be gathered internally, and the likelihood of proper management of education reform efforts.

Demographics

Figure 1 charts the percent of the population under 15 years of age. This is an important indicator since it provides a measure of the demand for education services in the region. In 2002, about 24 percent of the population in the region was under 15. This proportion is expected to diminish to about 19 percent by the year 2015. Compared to the average of OECD countries (with 20% of their population under age 15) the region as a whole does not differ significantly.

³ The regional means have been computed using information from the countries covered in this report and the eight northern tier countries of Czech Republic, Estonia, Hungary, Latvia Lithuania, Poland, Slovak Republic, and Slovenia.

Figure 1
Percent of population under age 15



Considering a vulnerability threshold of 24 percent (the regional mean), seven countries (Tajikistan, Turkmenistan, Uzbekistan, Kyrgyzstan, Azerbaijan, Albania and Kazakhstan) are above this limit. A malfunctioning education system would be particularly disruptive in these countries.

Income Per Capita

Income per capita is an important determinant of vulnerability since it reflects the amount of resources available to a country to foster development. In this paper, the potential availability of resources (as opposed to the actual public expenditures on education, which is described under Pillar III) is accounted for by PPP-adjusted per capita GDP, as reported in the 2003 World Bank Development Indicators.

GDP per capita in the region (in current terms) has grown at an average annual rate of 8 percent and was estimated in 2002 at about \$7,400. According to our definition of vulnerability threshold, countries with a per capita income of less than \$3,700 are considered highly vulnerable and countries generating less than \$5,900 are considered vulnerable.

In the region, seven countries meet the definition of highly vulnerable and four others the definition of vulnerable. They are listed in Table 2. Among the most vulnerable countries, Tajikistan, Armenia and Azerbaijan exhibit rates of growth above the regional average (as one should expect – countries that are poorer generally exhibit rates of growth higher than rich countries). However, Moldova, Kyrgyz Republic and Uzbekistan have rates of growth far

inferior to the regional average, a worrying sign. Of the vulnerable countries, Albania and Kazakhstan have rates of growth significantly higher than the regional average of 8.5 percent.

Table 2. Vulnerable Countries in Terms of Per Capita Income

	Country	Per capita Income (\$)	Rate of Annual Change since 1998
Highly Vulnerable	Tajikistan	980.0	10.5%
	Moldova	1470.0	3.5%
	Kyrgyz Republic	1620.0	4.1%
	Uzbekistan	1670.0	5.3%
	Georgia	2260.0	8.4%
	Armenia	3120.0	12.5%
	Azerbaijan	3210.0	15.1%
Vulnerable	Albania	4830.0	13.6%
	Ukraine	4870.0	8.3%
	Belarus	5520.0	7.7%
	Kazakhstan	5870.0	15.4%

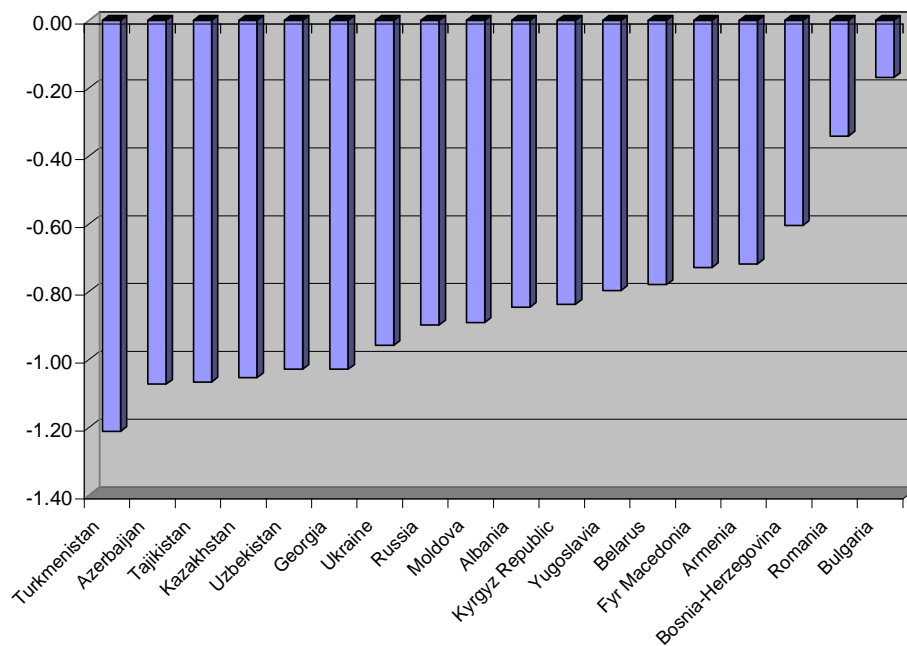
Control of Corruption

The impact of good (and bad) governance on development is a research topic that has received much attention in recent years. Here, we present an indicator of control of corruption in the region. This indicator was produced by Kaufmann, Kraay and Zoido-Lobaton (2003) by aggregating corruption concepts as compiled and measured by 13 separate sources, including the Economist Intelligence Unit, DRI, and the World Development Report⁴. On a global scale, this indicator ranges from about –2.5 to +2.5. In the region, as illustrated in Figure 2, only the northern tier countries and Croatia have reached a positive score.

For this indicator, we assessed a vulnerability threshold at –0.42, the mean value for the region. As can be seen in Figure 2, 16 countries are classified as vulnerable. The list is topped by Turkmenistan, Azerbaijan, Tajikistan, Kazakhstan, Uzbekistan, Georgia and Ukraine.

⁴ Control of corruption is one of six governance indicators computed by Kaufmann et al. (2003). The other ones are voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, and rule of law. They can be downloaded at: <http://www.worldbank.org/wbi/governance/govdata2002/>.

Figure 2
Corruption index



Summary for Pillar I

Table 3 summarizes the countries that are most vulnerable in terms of internal demand for education, scarce resources, and high corruption. Countries that exhibit an income per capita below the vulnerability threshold also exhibit high levels of corruption. This is not surprising since a positive relationship between poor governance and poor economic performance have been found in many studies. The only exception in this set is Armenia, whose low level of income is associated with less than average government corruption. Countries below the high vulnerability threshold are listed in **bold** in Table 3.

Table 3. Vulnerable Countries in Terms of Demographics, Resources and Corruption Control

Demographics	Income Per Capita	Control of Corruption
Tajikistan Turkmenistan Uzbekistan Kyrgyzstan Azerbaijan Albania Kazakhstan	Tajikistan Moldova Kyrgyz Republic Uzbekistan Georgia Armenia Azerbaijan Albania Ukraine Belarus Kazakhstan	Turkmenistan Azerbaijan Tajikistan Kazakhstan Uzbekistan Georgia Ukraine Russia Moldova Albania Kyrgyz Republic Yugoslavia Belarus Macedonia Armenia Bosnia
Countries with Missing Data		
Yugoslavia	Bosnia Yugoslavia	
<p>Note: Vulnerability definitions in this Table differ from the ones used throughout the paper. Countries were listed as vulnerable in their demographics if the percent of population under age 15 exceeded the regional mean (24%). Countries were listed as vulnerable in their control of corruption if the corruption index was below the regional median of -0.42.</p>		

What the above table makes clear is that the countries that have the greatest need for a good and widely accessible education system (Tajikistan, Turkmenistan, Uzbekistan, Kyrgyzstan, and Azerbaijan) are also the countries with both scarce resources and poor governance. The only exceptions are Turkmenistan (not so low income but bad corruption) and Kyrgyzstan (not so bad corruption but very low income).

Pillar II: Participation and Outcome

The indicators under this pillar measure a country's performance in each of the main education levels – primary, secondary and tertiary. Enrollment rates quantify the percentage of the general population that is enrolled at each level. As such, these rates help us understand issues of access and, consequently, equity. The trend variables give insight into recent changes and allow us to note dangerous warning signs. This pillar also contains primary school completion rates and pupil-teacher ratios. The first provides a measure of how easy it is for families to support their children while in school (although there are many other factors that can influence completion rate) while the latter provides a rough measure of the quality of primary education.

Primary education

Pre-primary Enrollment

In 2002, pre-primary enrollment rates averaged about 47 percent in the region but varied greatly, ranging from 6.1% in Tajikistan to 88.1 percent in the Czech Republic. Since 1998, pre-primary enrollment rates have increased at a rate of about 1.25 percent per year. Seven countries have enrollment rates lower than about 20 percent and are classified as most vulnerable (see Table 4). Three additional countries have enrollment rates lower than 31 percent and are classified as vulnerable. Among the most vulnerable countries, Tajikistan and Bosnia and Herzegovina also exhibit stagnant or even negative rates of change.

All the countries below the “highly vulnerable” threshold also performed worse than countries with comparable income. World Bank average enrollment rates for low income and lower middle income countries are 24 and 40 percent respectively. When compared with these figures, the performance of the seven highly vulnerable countries is worrisome. An extreme case is Bosnia and Herzegovina where enrollment rates are 30 percentage points below the world average. Vulnerable countries have pre-primary enrollment rates comparable to the World Bank averages (see Table 4).

Table 4. Vulnerable Countries on Pre-primary Enrollment Rates

	Country	Pre-primary Enrollment (%)	Rate of Change (% Change since 1998)	World Bank Averages for Countries with Comparable Income (%)
Highly Vulnerable	Tajikistan	6.1	0.02	24.4
	Bosnia and Herzegovina	8.9	-0.28	39.7
	Kyrgyz Republic	9.5	0.20	24.4
	Kazakhstan	13.5	0.28	39.7
	Azerbaijan	19.3	2.33	24.4
	Uzbekistan	19.9	0.95	24.4
	Turkmenistan	20.2	0.25	39.7
Vulnerable	Armenia	25.7	0.48	24.4
	Macedonia	27.1	0.20	24.4
	Georgia	30.8	1.15	24.4

Basic Education Enrollment

In 2002, basic education enrollment in the region averages about 95 percent and has been increasing at an annual rate of 0.8 percent since 1998. According to our threshold definition, no country in the region can be considered vulnerable for this indicator. With a basic enrollment rate of 79.3 percent, Bosnia and Herzegovina is the worst performer in the region but still has a rate that is about 83 percent of the regional mean. However, when compared with the enrollment rates of countries with similar income levels in other regions (94% is the world average for low income countries and 111% is the average for lower middle income countries) some countries

appear in a very vulnerable position⁵. The difference from world averages is particularly notable for lower middle income countries such as Bosnia and Herzegovina and Turkmenistan. They have performed worse than countries with comparable income by over 30 percentage points. Within the region, four countries exhibited a declining enrollment rate since 1998 (Bosnia and Herzegovina, Georgia, Macedonia, and Yugoslavia).

Primary Completion Rate

Primary completion rate in the region averaged 96.7 percent in 2001 and has been increasing since 1998 at a rate of 1.3 percent per year. This rate varies between 77 percent in Bosnia and Herzegovina to 130 percent in Belarus⁶. All countries have a completion rate above 80 percent of the regional mean with the only exception being Bosnia and Herzegovina. Moldova, with a rate of 80 percent, is also very close to the vulnerability threshold.

The countries exhibited great variability in terms of how primary education completion rate has been changing since 1998. In six countries the rate has been declining. The largest decline, -3.8 percent per year, has been reported in Bosnia and Herzegovina. This is worrisome for a country that also bottoms the list in terms of completion rate. The other countries with negative rates of change were Bulgaria, Kyrgyz Republic, Armenia, Azerbaijan and Albania.

Pupil-Teacher Ratio

Typically, this indicator inversely correlates with the amount of resources available for public education. So, for example, 1999 World Bank averages for low income countries are 40 pupils to a teacher. This ratio diminishes to 22 pupils to a teacher in lower middle income countries and to 17 pupils to a teacher in high income countries. At the same time, and particularly so in the E&E region, this indicator also reflects the efficiency (or inefficiency) of the education system with efficient systems characterized by higher pupil-teacher ratios. Therefore, low pupil-teacher ratios can be seen as a measure of good quality teaching (more teaching effort to a pupil) or as a symptom of inefficiency (lots of waste in teaching resources), depending upon specific circumstances. The E&E region is characterized by large inefficiencies in the education system. Therefore, since the mid to late 1990s, efforts have been made to rationalize the teaching force by increasing class sizes to 18 and above, aiming at 25.

The dataset reflects the opposing influences of these two forces at play (increasing income leading to a lower ratio and increasing rationalization leading to a higher ratio). Comparing data from 1991 with 2000-01, Albania, Bulgaria, Kyrgyzstan, and Macedonia show a trend of increasing ratios, perhaps reflecting an effort of increased rationalization of teaching resources. Since 1991, however, the region as a whole actually exhibited a decrease in this ratio from 19.6 in 1991 to 17.6 in 2000, the most recent year with comprehensive data. Given the ambiguity with which a change in this ratio can be interpreted, we did not adopt a threshold value for this

⁵ Enrollment rates are calculated as the ratio of number of enrollments over the number of people of school age. For example, basic education enrollment rates are obtained by dividing basic education enrollment numbers by population aged 6-14. Because children older than 14 may still be enrolled in basic education (as a result of repetition or of rejoining the system after having dropped out), it is possible to have rates that are higher than 100%.

⁶ Data refers to 2001. For 4 countries, including Turkmenistan and Yugoslavia, data were not available.

indicator. Instead, we suggest that changes in the pupil-teacher ratio should be evaluated on a country by country basis.

In 2000, this ratio varied between 24.5 pupils to a teacher in Kyrgyzstan to 10.5 in Hungary. Since 1998, this ratio has been declining in all countries except Armenia, Kazakhstan and Romania (however note that for B&H, Turkmenistan, Yugoslavia and Uzbekistan, data were not available).

Secondary Education

General Secondary Enrollment

In 2002, general secondary enrollment averaged 32 percent in the region, increasing at an annual rate of 0.9 percent. Four countries (Bosnia & Herzegovina, Tajikistan, Croatia and Turkmenistan) are below the vulnerability threshold and, for Croatia and Turkmenistan, the rates of change are negative (see Table 5). Belarus, Kazakhstan and Yugoslavia are three other countries where rates of change have declined since 1998.

Table 5. General Secondary Enrollment

Country	General Secondary Enrollment (%)	Change (%) per year since 1998
Bosnia and Herzegovina	16.6	0.250
Tajikistan	19.1	0.700
Croatia	21.6	-0.700
Turkmenistan	21.9	-0.700

Vocational/Technical Enrollment

For the region as a whole, enrollment in vocational/technical secondary school has remained basically constant since 1998 at around 35 percent. However, this flat trend hides a high variability within the region. Some countries exhibit a significant increase in enrollment in technical/vocational schools (Uzbekistan +2.4%/yr; Bulgaria +1.4%/yr; Kazakhstan +0.7%/yr) while others exhibit a strong decrease (Croatia -3.1%/yr; Moldova -2.5%/yr; Georgia -1.4%/yr; Yugoslavia -1%/yr). This drastic decrease could be interpreted as a rational response to the new demands of a market economy that requires a different skill set. Since there is no agreed-upon guideline that defines what percentage of secondary enrollments should be devoted to technical vocational learning, it is difficult to assess a vulnerability threshold. For consistency with the other indicators, thresholds similar to the other indicators have been adopted. Table 6 lists the seven highly vulnerable countries (with an enrollment level less than 50% of the regional mean) and the one vulnerable country.

Four of these eight countries (Tajikistan, Kyrgyzstan, Moldova and Georgia) also exhibited a declining rate. In two of these countries (Tajikistan and Georgia) the reduction in technical/vocational enrollment has been more than compensated for by increases in general

secondary enrollments. The other two countries (Kyrgyzstan and Moldova) report negative trends in *total* (general plus technical/vocational) secondary enrollment levels (see next section) suggesting that the situation there has been worsening since 1998.

Table 6. Countries with the Lowest Vocational/Technical Secondary Enrollments

	Country	Vocational/technical secondary enrollment (%)	Change (%) per year since 1998
Highly Vulnerable	Turkmenistan	5.5	0.175
	Tajikistan	7.8	-0.150
	Azerbaijan	10.0	0.125
	Kyrgyz Republic	11.4	-0.425
	Armenia	11.5	0.025
	Moldova	12.9	-2.475
	Georgia	13.2	-1.450
Vulnerable	Kazakhstan	24.1	0.700

Total Enrollment in Secondary Schools

Summing up enrollment levels in general secondary and technical/vocational secondary schools, we obtain a regional average of 67.5 percent in 2002, growing at a rate of 0.9 percent annually. Based on these values, two countries (Tajikistan and Turkmenistan) are below the highly vulnerable threshold and six others are under the vulnerable threshold. Four countries in this list (Turkmenistan, Moldova, Kyrgyzstan and Bosnia) exhibit a declining rate since 1998.

By comparison, the World Bank averages for low income countries and lower middle income countries are about 46 and 75 percent respectively. With the exception of Georgia, Kyrgyzstan and Armenia, all the countries in Table 7 performed worse than comparable countries in other regions.

Table 7. Vulnerable Countries on Total Enrollments in Secondary Education

	Country	Total Secondary Education Enrollment (%)	Change (%) per year since 1998
Highly Vulnerable	Tajikistan	26.9	0.550
	Turkmenistan	27.4	-0.525
Vulnerable	Moldova	40.1	-1.400
	Azerbaijan	42.5	0.375
	Georgia	45.2	0.025
	Kyrgyz Republic	47.5	-0.200
	Armenia	49.0	1.450
	Bosnia and Herzegovina	51.7	-0.100

Tertiary Education

Gross enrollment into higher education in the region, measured as enrollment numbers as a percent of population aged 19-24, increased significantly since 1998 at a rate of almost 2 percent annually; in 2002, this rate stood at 34 percent.

Yet, the region exhibits large differences among countries. Four countries: Turkmenistan, Uzbekistan, Tajikistan, and Azerbaijan, report enrollment rates in tertiary education lower than 14 percent and fall below the high vulnerability threshold (see Table 8). With the exception of Uzbekistan, where enrollment into tertiary education has been growing at an annual rate of 0.5 percent, these countries also lagged behind in their pace of change. Turkmenistan and Azerbaijan are sliding backward. Turkmenistan also under-performs significantly when compared with countries within the same income group (the world average for lower middle income countries is about 22%).

Four additional countries (Bosnia and Herzegovina, Armenia, Macedonia, and Moldova) have been classified as vulnerable with enrollment rates between 19 and 25 percent. All these countries show a significant increase (0.7% per year or higher) in enrollment rates since 1998.

Table 8. Tertiary Education

	Country	Tertiary education enrollment rate	Change (%) per year since 1998
Highly vulnerable	Turkmenistan	2.6	-0.450
	Uzbekistan	7.9	0.475
	Tajikistan	13.0	0.300
	Azerbaijan	13.5	-0.025
Vulnerable	Bosnia and Herzegovina	19.2	0.725
	Armenia	21.8	1.450
	Macedonia	22.5	1.150
	Moldova	24.1	1.050

Summary for Pillar II

Table 9 summarizes the countries that fall below the high vulnerability and vulnerability thresholds we defined. Highly vulnerable countries are presented in **bold**. Countries are underlined whose rate of change since 1998 suggests a worsening of conditions. In interpreting this table, one should be aware that for some countries data were not available, and for that particular indicator, the country is not listed.

Table 9. Vulnerable Countries in Terms of Participation in Education

Pre-Primary Enrollment	Basic Education Enrollment	Primary Completion Rate	Pupil-Teacher Ratio	Secondary Education	Tertiary Education
Tajikistan Bosnia and Herzegovina Kyrgyz Republic Kazakhstan Azerbaijan Uzbekistan Turkmenistan Armenia Macedonia Georgia	No country met the vulnerability threshold as defined in this paper ⁷	Bosnia and Herzegovina	Vulnerability threshold not established (see text)	Tajikistan Turkmenistan Moldova Azerbaijan Georgia Kyrgyz Republic Armenia Bosnia and Herzegovina	Turkmenistan Uzbekistan Tajikistan Azerbaijan Albania (2001) Bosnia and Herzegovina Armenia Macedonia Moldova Yugoslavia (2001)
Countries with Missing Data					
		Turkmenistan Yugoslavia	Bosnia and Herzegovina Turkmenistan Uzbekistan		

Table 9 presents a fairly consistent picture of which countries are faltering in providing their children with adequate education. The list is topped by Bosnia and Herzegovina which is listed as highly vulnerable or vulnerable in four out of six indicators (for the sixth, data was not available). This country also reports regression (instead of progression) on four indicators since 1998. Turkmenistan and Tajikistan are below the highly vulnerable threshold in three out of six indicators. Turkmenistan has also declining rates in two indicators. These two countries emerge as the most vulnerable of the countries considered.

There are then several countries that fall below the vulnerability threshold in more than one indicator such as Armenia and Azerbaijan (3 indicators), Kyrgyz Republic, Uzbekistan, Macedonia and Georgia (2 indicators). In all, 14 countries are classified as vulnerable for at least one indicator, 9 for at least two indicators, and 5 for at least three indicators.

We note that some indicators were not measurable for Yugoslavia, Bosnia, Uzbekistan and Turkmenistan. Therefore, for these countries our conclusions of relative vulnerability should be taken with caution.

Pillar III. Education System Strength: Commitment, Funding and Outcomes

These indicators measure on one hand the amount of resources that the government is committing to education and, on the other hand, its impact on education. The latter is quantified by youth literacy rate and the average number of years spent in schools.

⁷ While no country was found vulnerable in basic education enrollment rates, the following countries have registered a negative trend since 1998: Bosnia (-3.275%), Georgia (-0.875%), Macedonia (-0.425%), and Serbia (-1.33%).

Percent of GDP Spent on Education

In 2002, the countries in the region spent on average about 4.6 percent of GDP on education, a figure that has remained basically unchanged since 1998. However, close inspection of the data reveals that in some countries public expenditures on education have increased (although by a small amount) while for several countries (eight of the non-graduated countries) the percent of GDP spent on education actually diminished. These are Albania (-0.075%), Azerbaijan (-0.05%), Macedonia (-0.22%), Kyrgyzstan (-0.1%), Moldova (-0.1%), Turkmenistan (-0.075%), Romania (-0.2%) and Yugoslavia (-0.15%). These absolute amounts appear at first sight fairly negligible. However, we remind the reader that they are expressed on an annual basis and that the actual percentage of GDP spent on education is fairly low to begin with.

Education expenditures ranged from 1.9 percent (Armenia) to 6.8 percent (Belarus). According to this indicator, Armenia and Georgia are highly vulnerable while three others are vulnerable (see Table 10). With the exception of Azerbaijan, all these countries invest in education less than countries with comparable income (the World Bank average for low income countries in 2000 was 3%).

Table 10. Vulnerable Countries in Terms of Expenditures on Education

	Country	% of GDP Spent On Education	Change (%) per year since 1998
Highly Vulnerable	Armenia	1.9	0.025
	Georgia	2.2	0.050
Vulnerable	Albania	2.6	-0.075
	Tajikistan	2.6	0.100
	Azerbaijan	3.2	-0.050

Youth Literacy Rate

In terms of youth literacy rate, the region performs well if compared to countries with similar income levels. All countries, with the exception of Albania (which has a youth literacy rate of 97.8%) have rates of 99.6 percent or higher. Two countries (Romania and Georgia) have shown a slight regression in these rates.

Average Years of Schooling

The average school expectancy for the region was 11.7 years in 2000, the most recent year with broad coverage. The average years of schooling have increased at the rate of 1.3 percent per year since 1998. Data to compute this indicator is available for only 12 non-graduated countries. Within this limited set, only two countries, Georgia and Armenia, are classified as vulnerable.

Summary for Pillar III

Table 11 summarizes the situation of the region in terms of its commitment and outcomes. Armenia and Georgia stand out as the countries that invest the least in their citizens' education. They are also the countries with the lowest average years of schooling. Albania, Azerbaijan and Tajikistan are also classified as vulnerable in terms of their public expenditures on education. For the first two countries, expenditures on education have actually diminished.

Table 11. Vulnerable Countries in Terms of Commitment and Outcomes

% of GDP Spent on Education	Youth Literacy Rate	Average Years of Schooling
Armenia Georgia Albania Tajikistan Azerbaijan	No country identified	Georgia Armenia
Countries with Missing Data		
Romania Yugoslavia Bosnia and Herzegovina Croatia Kazakhstan Russian Federation Uzbekistan	Azerbaijan Georgia Kyrgyz Republic Macedonia, FYR Turkmenistan Yugoslavia	Bosnia and Herzegovina Kyrgyz Republic Macedonia, FYR Russian Federation Turkmenistan Ukraine Uzbekistan Azerbaijan

Pillar IV: Donor Support

This last pillar looks at the amount of international aid (excluding U.S. aid) that has been given to the region. It is an important indicator of development support for education since a mismatch between vulnerability and donor support could be framed as an argument (although several other considerations need to be made) for a change in the level of targeted U.S. support.

Overall donor support for education in the region varies significantly, from a total of \$1,923 per 100 persons in Bosnia & Herzegovina to less than \$20 per 100 people in Turkmenistan.

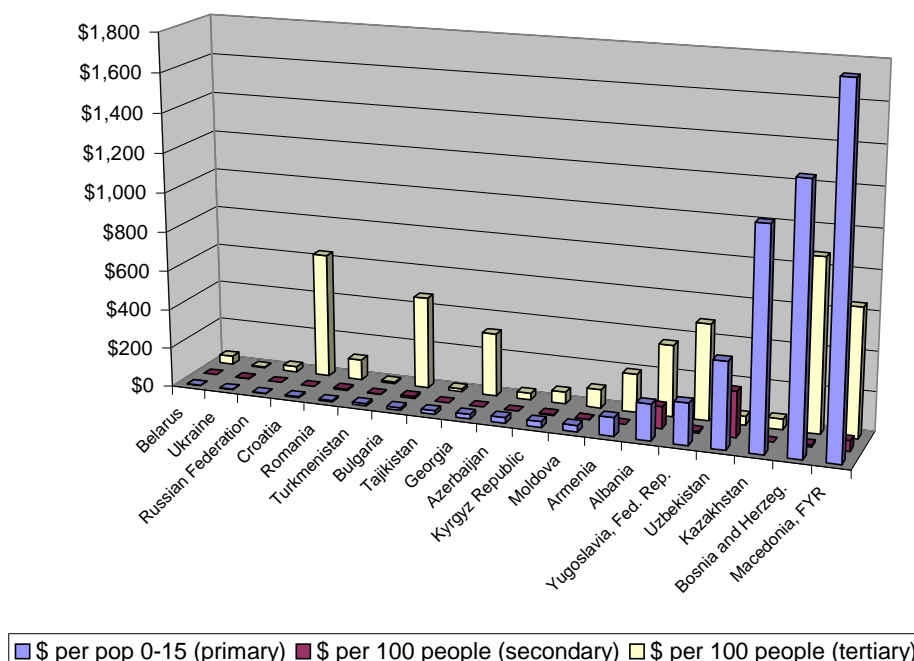
In this section, we have highlighted the countries that received less than \$15 per person under age 15 (support for pre-primary and primary education), \$10 per 100 persons for secondary education, and \$10 per 100 people for tertiary education.

According to this threshold, two countries, Turkmenistan and Ukraine, receive support under the just mentioned limits in all three education levels⁸. There are also four countries (Belarus,

⁸ It is important to note that these two countries vary greatly in terms of their political and economic systems as well as their support for the education sector. Consequently, the low levels of donor support may have very different causes. In the case of Ukraine, the country is performing fairly well and may not wish to borrow for education; whereas, under the current political conditions in Turkmenistan it is very difficult to implement education reforms.

Croatia, Romania and Russia) that receive less than \$15 per child under 15 and less than \$10 per person (for secondary education). Nine additional countries receive limited support for at least one education level⁹.

Figure 3
Donor support for education (USA excluded)



Summary

Table 12 groups the countries of the region by vulnerability. In the first tier we have included those countries that, within a given pillar, are classified as *highly vulnerable* in at least one indicator. In the second tier we have included those countries that, within a given pillar, are classified as *vulnerable* in at least one indicator. In the third tier we have included the countries that cannot be listed as vulnerable in any available indicators. This method of grouping countries obviously suffers from the fact that data are not available for some countries and for some indicators. With this limitation in mind, Table 12 provides an overall view of where vulnerability seems to be concentrated.

Donors simply may not be lending for this purpose (Dr. Faifer of the USAID, Bureau of Europe and Eurasia, Social Transition Team pointed out these possibilities).

⁹ Bulgaria receives limited support for primary education. Armenia, Azerbaijan, Bosnia-Herzegovina, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, and Tajikistan receive limited support for secondary education.

Table 12. Summary of Vulnerability by Pillar

	Education Needs and Capacity To Meet Them	Participation and Outcomes	Commitment	Donor Support
First Tier (Most Vulnerable)	Tajikistan Moldova Kyrgyz Republic Uzbekistan Georgia Armenia Azerbaijan	Tajikistan Bosnia and Herzegovina Kyrgyz Republic Kazakhstan Azerbaijan Uzbekistan Turkmenistan	Armenia Georgia	Turkmenistan Ukraine Belarus Croatia Romania Russia
Second Tier	Albania Ukraine Belarus Kazakhstan Turkmenistan Russia Yugoslavia	Albania Moldova Armenia Macedonia Georgia	Albania Tajikistan Azerbaijan	Bulgaria Armenia Azerbaijan Bosnia-Herzegovina Georgia Kazakhstan Kyrgyz Republic Moldova Tajikistan
Third Tier (Least Vulnerable)	Bulgaria Croatia Romania Macedonia, FYR Bosnia and Herzegovina	Bulgaria Croatia Romania Belarus Russia Ukraine	Bulgaria Croatia Romania Belarus Moldova	Macedonia Albania Uzbekistan Yugoslavia
No Data For Some Indicator	Bosnia and Herzegovina Turkmenistan Yugoslavia	Albania Bosnia and Herzegovina Croatia Romania Turkmenistan Uzbekistan Yugoslavia	Yugoslavia Bosnia and Herzegovina Kazakhstan Russian Federation Uzbekistan Kyrgyz Republic Macedonia, FYR Turkmenistan Ukraine	

A column on donor support is included in Table 12 not to signify that low donor support is a sign of vulnerability but to provide a measure of the aid countries receive. The column on donor support therefore does not list countries by “vulnerability.” Instead, in the first tier are countries that receive support under the limits (mentioned in the section on donor support) in at least two education levels. The second tier lists countries that receive insufficient support at least for one education level. The last tier lists countries that, for all education levels, receive support above the limits described above.

Table 12 illustrates that there is a cohort of six countries (Tajikistan, Kyrgyzstan, Uzbekistan, Azerbaijan, Armenia and Georgia) that are highly vulnerable in two out of three pillars. With the

exception of Uzbekistan, all these countries receive limited donor support in at least one education level. There is then another group of four countries (Moldova, Bosnia & Herzegovina, Kazakhstan, and Turkmenistan) that are highly vulnerable in at least one pillar. All these countries receive limited donor support in at least one education level (in the case of Turkmenistan, in all three education levels). There is another group of six countries that are not highly vulnerable in any pillar but are vulnerable in three pillars (Albania) or one (Ukraine, Belarus, Russia, Macedonia and Yugoslavia). As perhaps one would expect, donor support for these countries is low. Albania, Macedonia and Yugoslavia are exceptions though, having received more than \$8 per person since 1998. Finally, Bulgaria, Croatia and Romania are listed in the third tier in all pillars since they are the least vulnerable of the lot in all pillars considered.

This broad ordering of countries based on vulnerability should be taken with a certain caution since, for many countries, indicators could not be computed due to lack of data. The last row of Table 11 summarizes the countries for which data is not available to compute at least one indicator. As the Table illustrates, Bosnia & Herzegovina, Yugoslavia and Turkmenistan lack data in at least one indicator in each pillar. Uzbekistan has limited data in two pillars. Finally, several other countries have limited information, particularly on public expenditures on education and on average years of schooling (Pillar III).

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Additional Data

Table A1. Basic education enrollment rates

Country	Basic education enrollment rates	Rate of change since 1998
Bosnia and Herzegovina	79.3	-0.035
Turkmenistan	80.8	0.001
Armenia	88.4	0.018
Russian Federation	90.0	0.004
Azerbaijan	90.4	0.011
Belarus	93.3	0.007
Tajikistan	94.4	0.013
Moldova	94.7	0.006
Ukraine	94.7	0.013
Kyrgyz Republic	94.8	0.012
Croatia	95.7	0.039
Georgia	97.0	-0.009
Macedonia	97.1	-0.004
Uzbekistan	97.5	0.023
Bulgaria	98.7	0.012
Kazakhstan	100.0	0.016
Romania	100.9	0.008
Yugoslavia, FR (Serbia/Montenegro)	-	-0.019

Green values denote “non vulnerable” according to the thresholds defined in this paper. Negative rates of change have been highlighted in red.

Table A2. Regional primary completion rates

Country	Primary Completion Rates	Rate of Change Since 1998
Bosnia and Herzegovina	76.6	-0.043
Moldova	80.2	0.009
Romania	88.8	0.018
Georgia	91.5	0.060
Bulgaria	91.9	-0.013
Kyrgyz Republic	94.5	-0.025
Armenia	95.2	-0.011
Macedonia, FYR	95.3	0.024
Ukraine	97.6	0.026
Uzbekistan	97.7	0.063
Russian Federation	98.8	-
Kazakhstan	99.3	0.026
Tajikistan	100.2	0.053
Azerbaijan	102.9	0.000
Albania	106.1	-0.030
Belarus	130.7	-
Croatia	-	-
Turkmenistan	-	-
Yugoslavia, FR (Serbia/Montenegro)	-	-